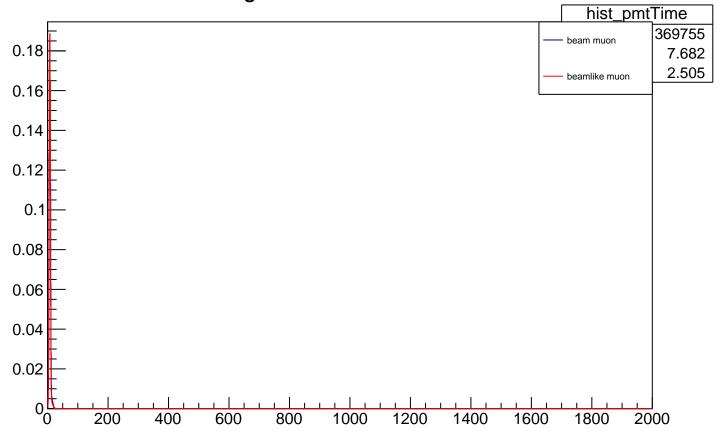
Single PMT Charge overview hist_pmtPE 369755 0.03 beam muon 64.36 61.89 beamlike muon 0.025 0.02 0.015 0.01 0.005 0 r 50 200 250 350 500 100 150 300 400 450

Single PMT Time overview



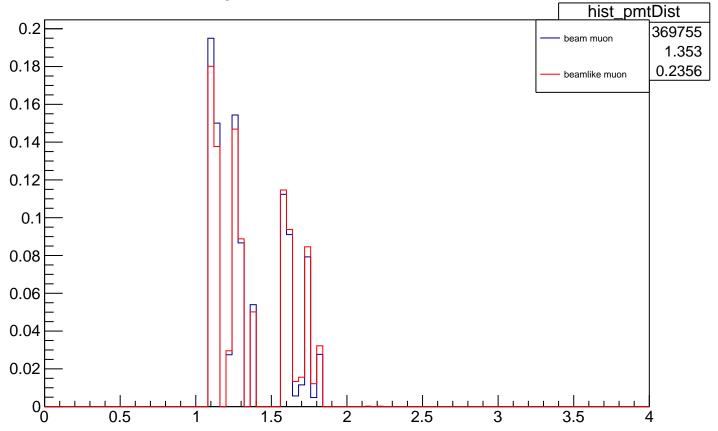
Single PMT Angle overview hist_pmtAngle 369755 beam muon 0.8931 0.4231 beamlike muon 0.1 0.08 0.06 0.04 0.02

1.5

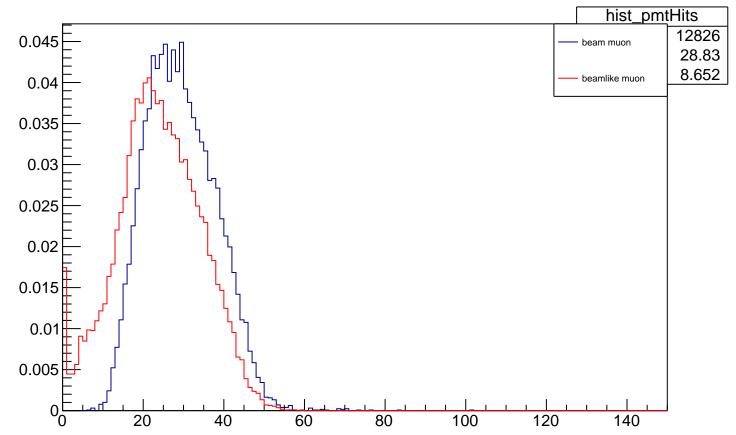
0

0.5

Single PMT Distance overview

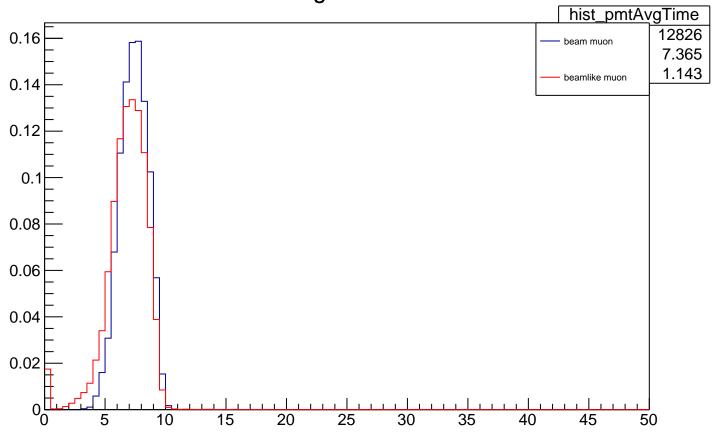


Hit PMTs overview



PMT Total Charge overview hist_pmtPEtotal 12826 beam muon 0.022 1893 445.7 beamlike muon 0.02 0.018 0.016 0.014 0.012 0.01 0.008 0.006 0.004 0.002 12000 2000 4000 6000 8000 10000

PMT Average Time overview



PMT Barycenter Angle overview hist_pmtAngleBary 12826 beam muon 0.05 0.5772 0.2377 beamlike muon 0.04 0.03 0.02 0.01 0.5 1.5 2.5

PMT Angular RMS overview hist_pmtAngleRMS 12826 beam muon 0.9586 0.09 0.1342 beamlike muon 0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01

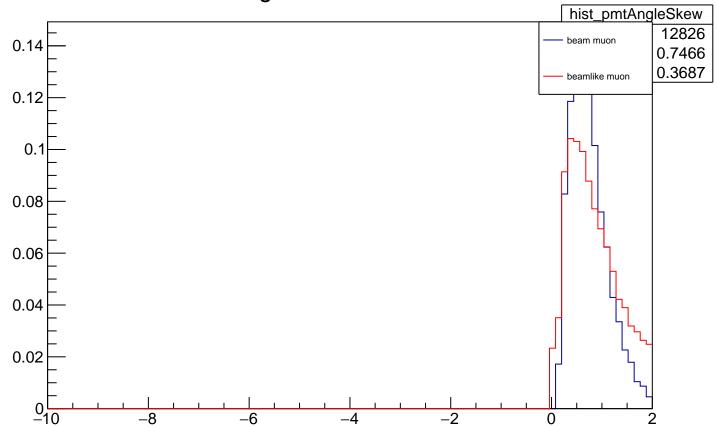
1.5

2.5

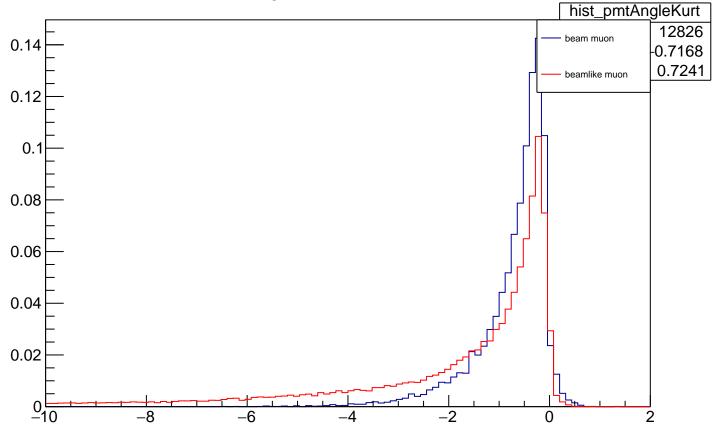
0.5

PMT Angular Variance overview hist_pmtAngleVar 12826 beam muon 0.6997 0.05 0.2632 beamlike muon 0.04 0.03 0.02 0.01 0.5 1.5 2.5

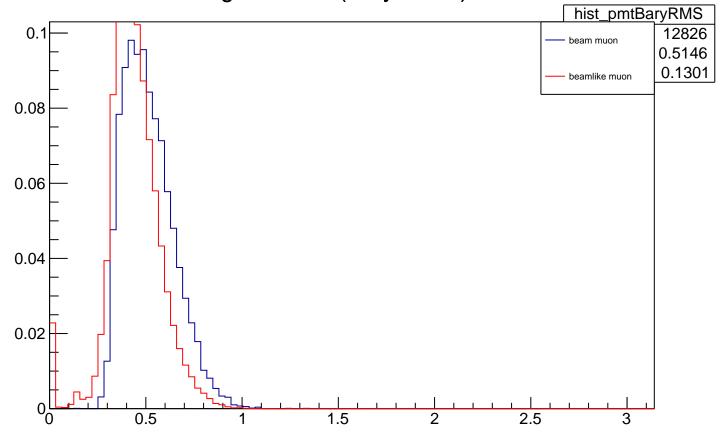
PMT Angular Skewness overview



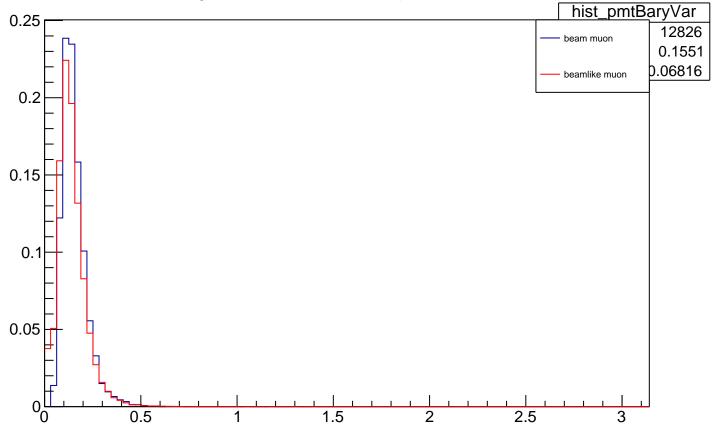
PMT Angular Kurtosis overview



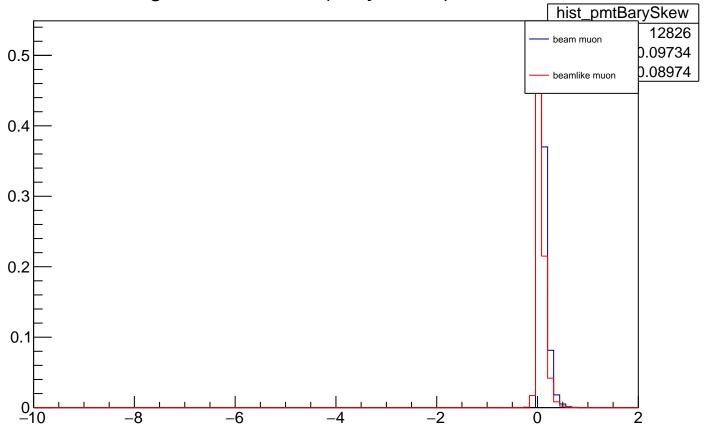
PMT Angular RMS (Barycenter) overview



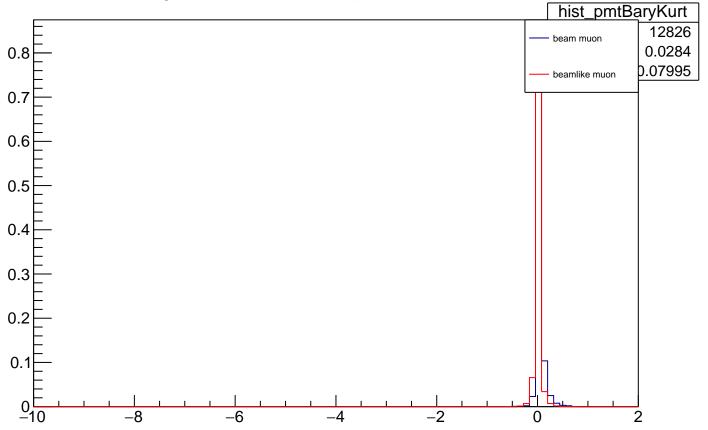
PMT Angular Variance (Barycenter) overview



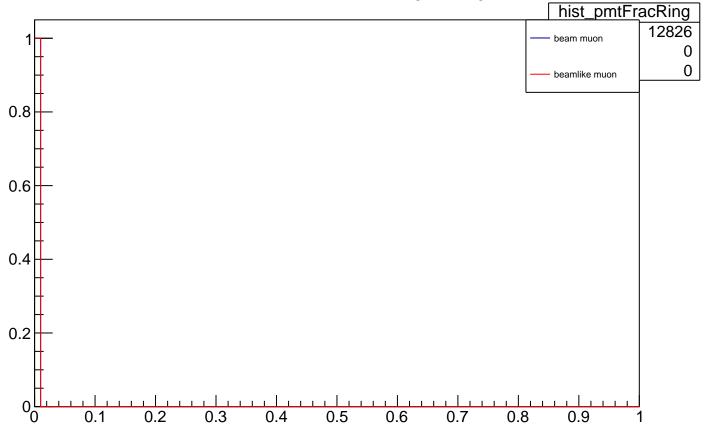
Angular Skewness (Barycenter) overview



Angular Kurtosis (Barycenter) overview

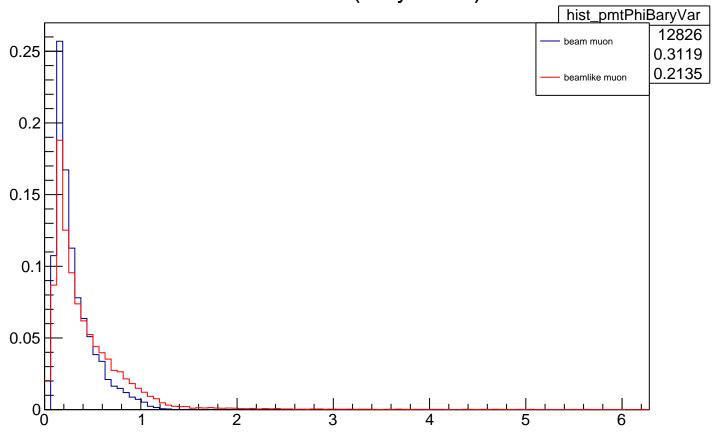


Fraction of PMT hits in Ring (weighted)

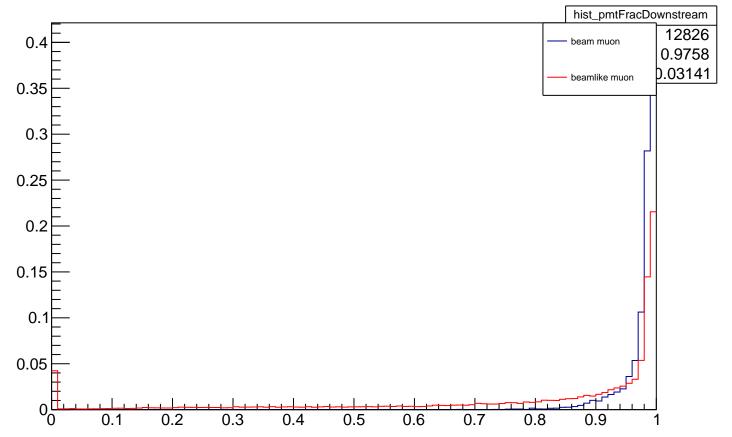


Phi RMS (Barycenter) hist_pmtPhiBaryRMS 12826 beam muon 0.6844 0.06 0.2094 beamlike muon 0.05 0.04 0.03 0.02 0.01 0.5 1.5 2.5

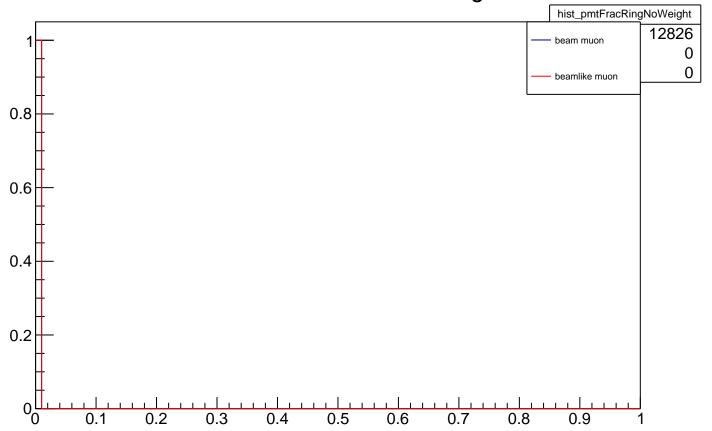
Phi Variance (Barycenter)



Fraction of PMT hits downstream



Fraction of PMT hits in Ring



Charge fraction highest PMT hist_pmtFracHighestQ 12826 beam muon 0.1764 0.07 0.06522 beamlike muon 0.06 0.05 0.04 0.03 0.02 0.01

0.5

0.4

0.6

0.7

8.0

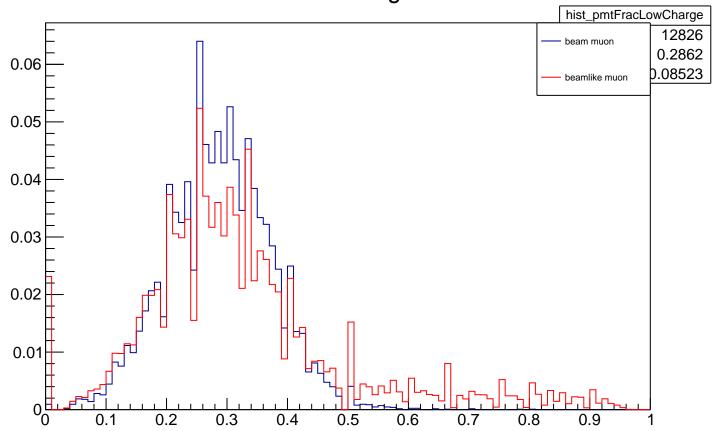
0.9

0.2

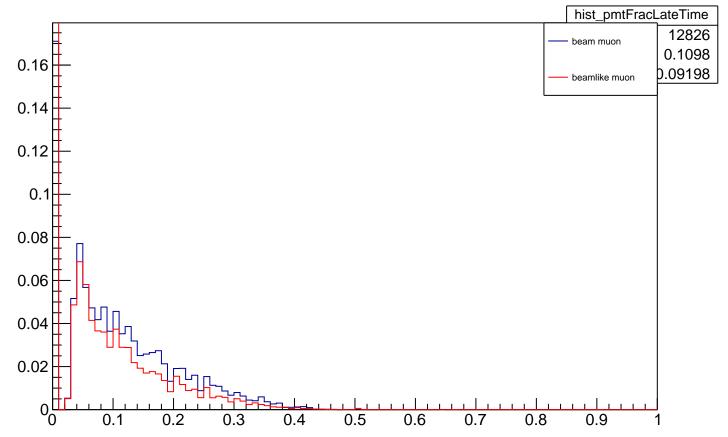
0.1

0.3

Fraction of low charge PMT hits

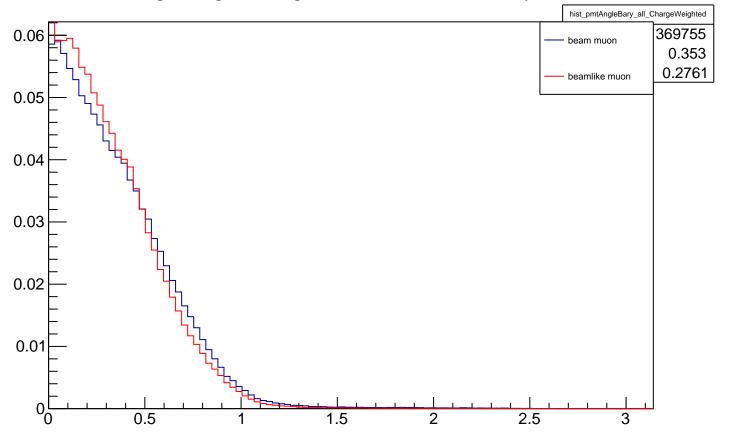


Fraction of late PMT hits



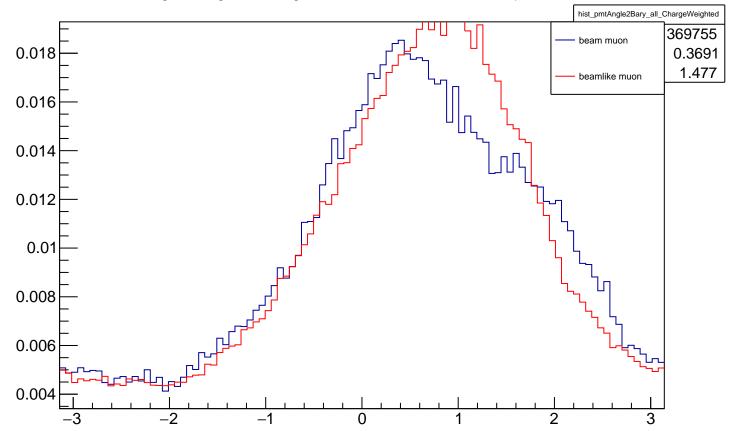
Angular distribution w.r.t. barycenter hist_pmtAngleBary_all 369755 beam muon 0.4994 0.035 0.361 beamlike muon 0.03 0.025 0.02 0.015 0.01 0.005 0.5 1.5 2.5

Charge weighted angular distribution w.r.t. barycenter



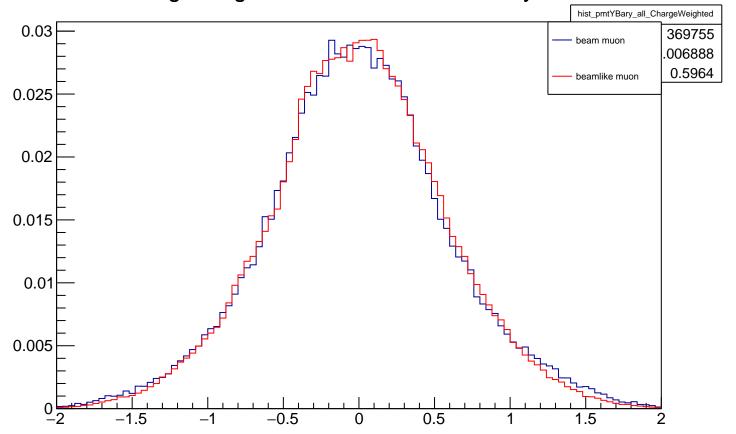
Angular distribution w.r.t. barycenter (II) hist_pmtAngle2Bary_all 369755 beam muon 0.3025 0.016 1.577 beamlike muon 0.014 0.012 0.01 0.008 0.006

Charge weighted angular distribution w.r.t. barycenter (II)



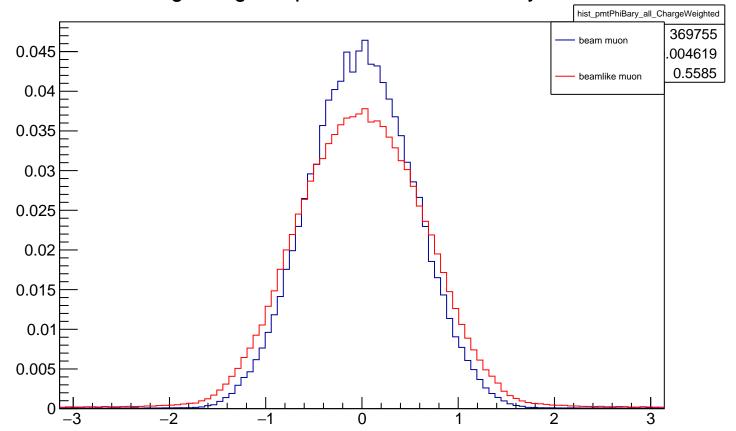
Y distribution w.r.t. barycenter hist_pmtYBary_all 0.02 369755 beam muon .008166 0.018 0.7668 beamlike muon 0.016 0.014 0.012 0.01 0.008 0.006 0.004 0.002 1.5 -1.5 -0.50.5

Charge weighted Y distribution w.r.t. barycenter

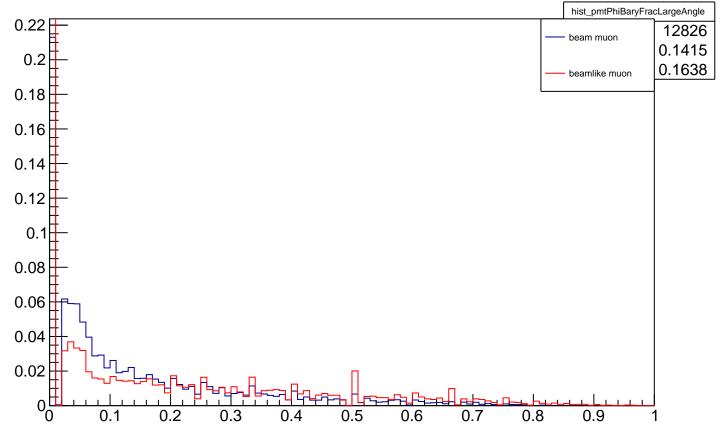


Phi distribution w.r.t. barycenter hist_pmtPhiBary_all 369755 beam muon 0.035 .005845 0.7017 beamlike muon 0.03 0.025 0.02 0.015 0.01 0.005

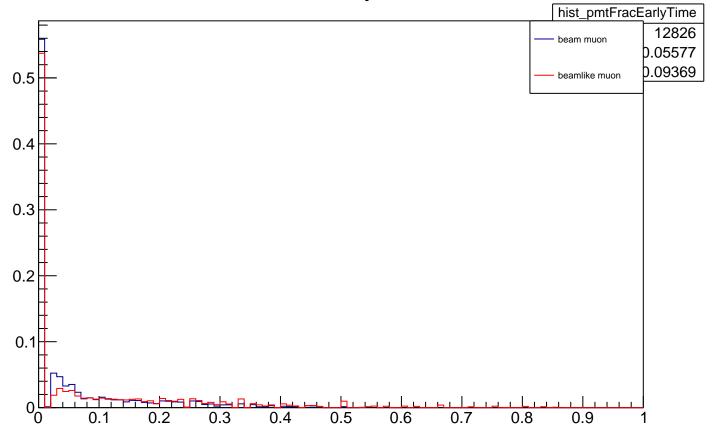
Charge weighted phi distribution w.r.t. barycenter



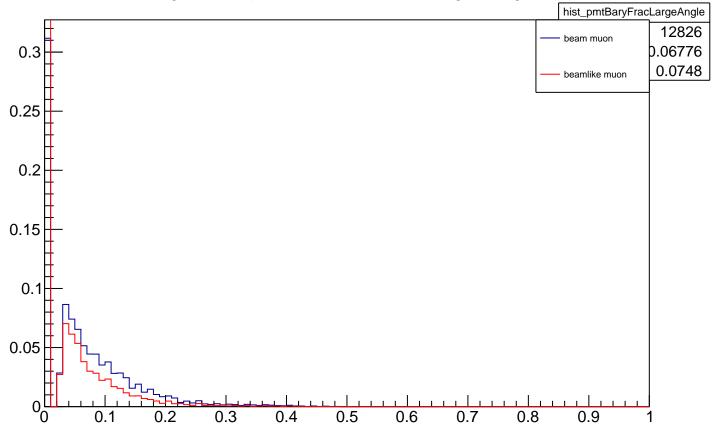
Phi Large Angles (Barycenter)



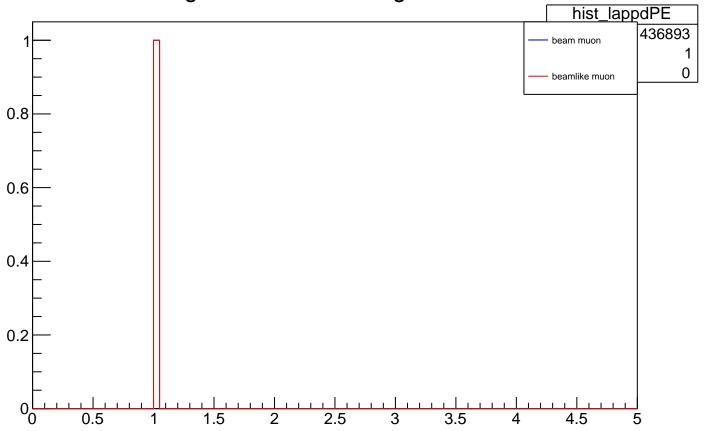
Fraction of early PMT hits



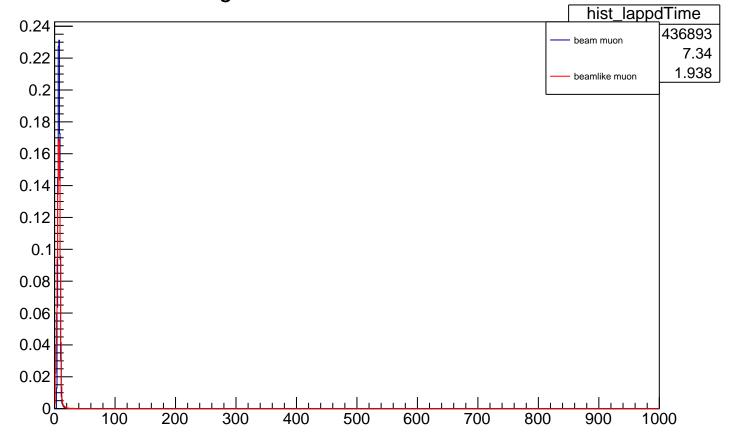
Angle (Barycenter) fraction large angles



Single LAPPD Hit Charge overview



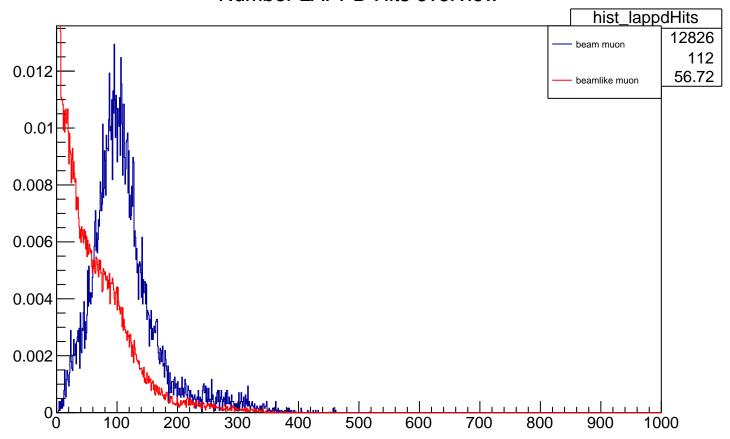
Single LAPPD Hit Time overview



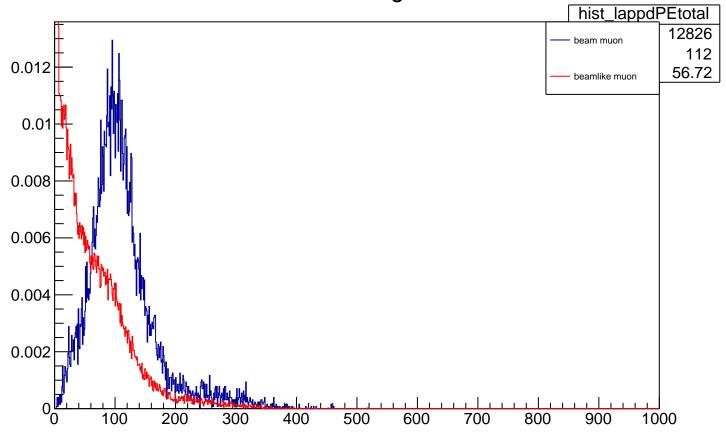
Single LAPPD Hit Angular overview hist_lappdAngle 436893 beam muon 0.495 0.12 0.2938 beamlike muon 0.1 0.08 0.06 0.04 0.02 0 r 1.5 0.5 2.5

Single LAPPD Hit Distance overview hist_lappdDist 436893 beam muon 1.344 0.6 0.1031 beamlike muon 0.5 0.4 0.3 0.2 0.1 1.5 2.5 0.5 3.5

Number LAPPD Hits overview



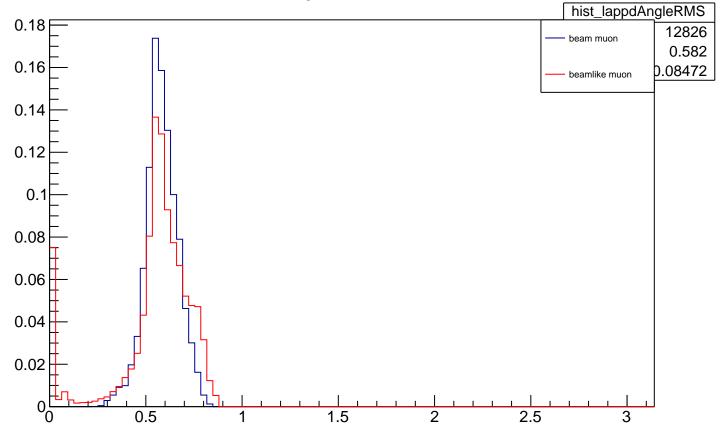
LAPPD Total Charge overview



LAPPD Average Time overview hist_lappdAvgTime 0.16 12826 beam muon 7.397 1.184 beamlike muon 0.14 0.12 0.1 0.08 0.06 0.04 0.02 15 25 30 35 45 50 10 20 40

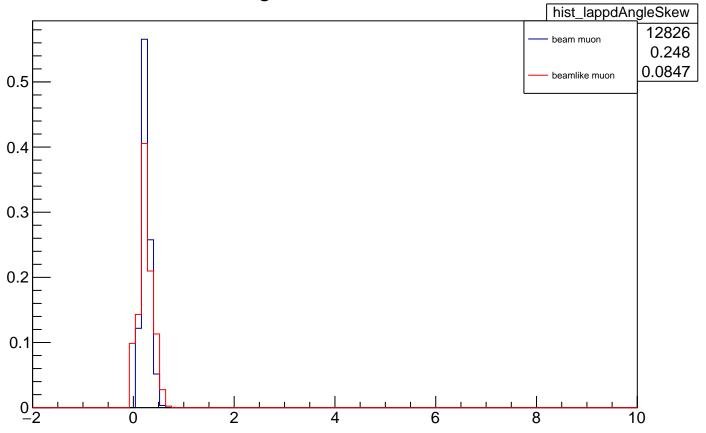
LAPPD Barycenter Angle overview hist_lappdAngleBary 12826 beam muon 0.3247 0.08 0.1652 beamlike muon 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0.5 1.5 2.5

LAPPD Angular RMS overview

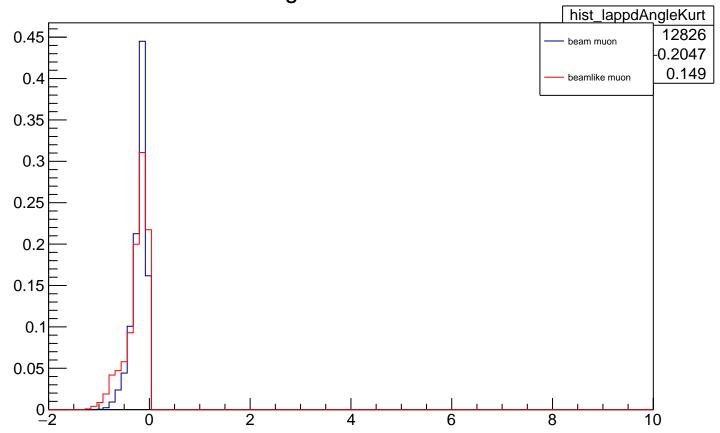


LAPPD Angular Variance overview hist_lappdAngleVar 0.16 12826 beam muon 0.3458 0.0982 0.14 beamlike muon 0.12 0.1 0.08 0.06 0.04 0.02 0 L 0.5 1.5 2.5

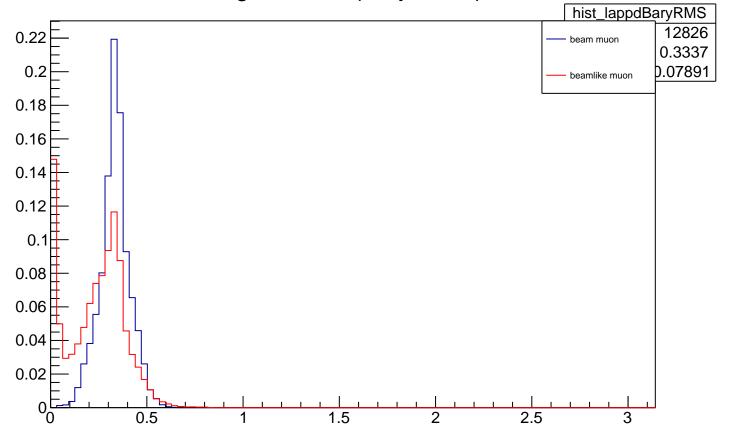
LAPPD Angular Skewness overview



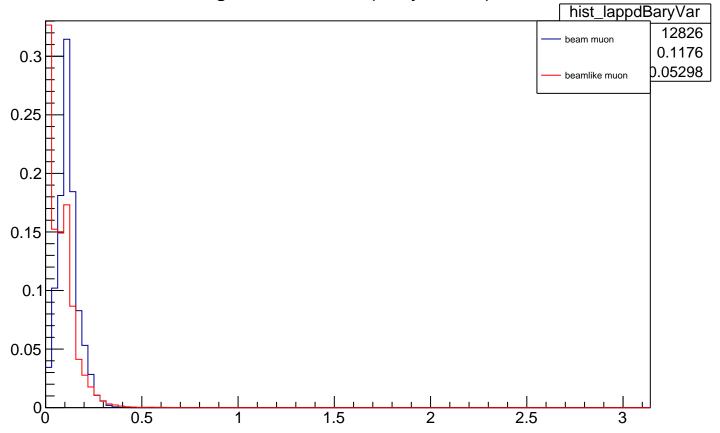
LAPPD Angular Kurtosis overview



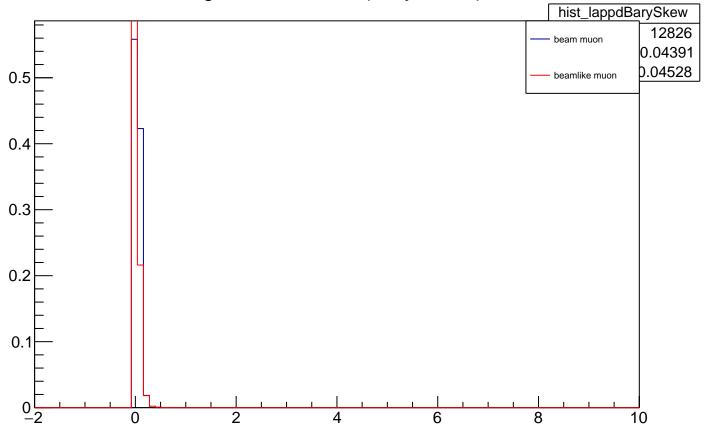
LAPPD Angular RMS (Barycenter) overview



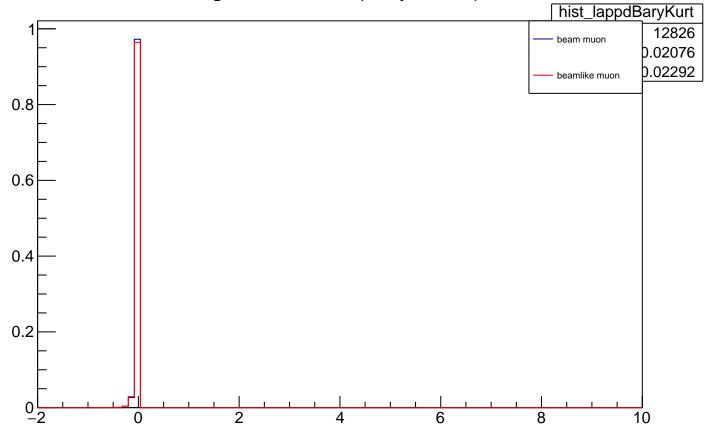
LAPPD Angular Variance (Barycenter) overview



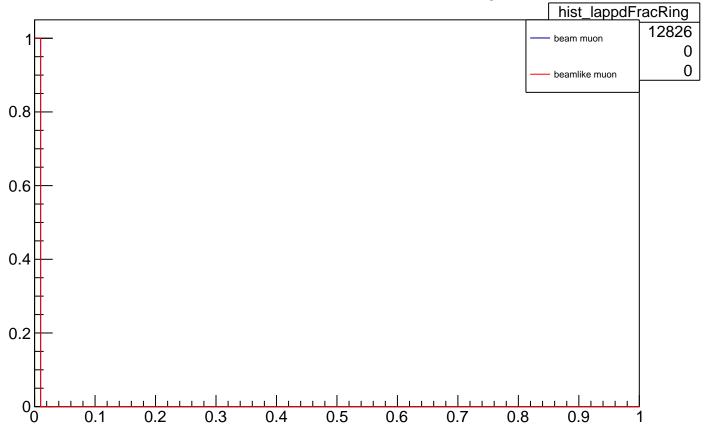
LAPPD Angular Skewness (Barycenter) overview



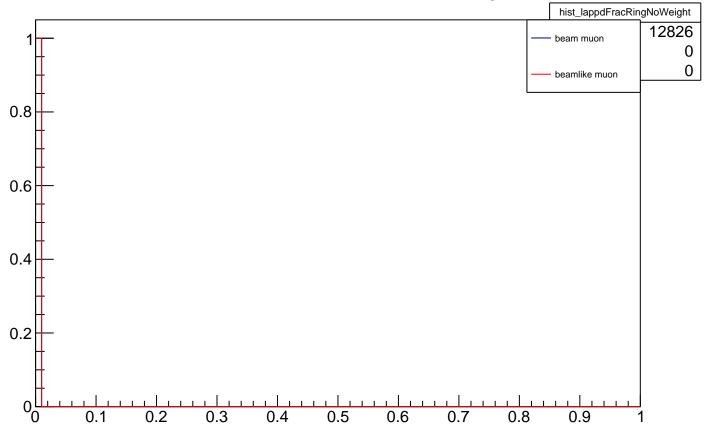
LAPPD Angular Kurtosis (Barycenter) overview



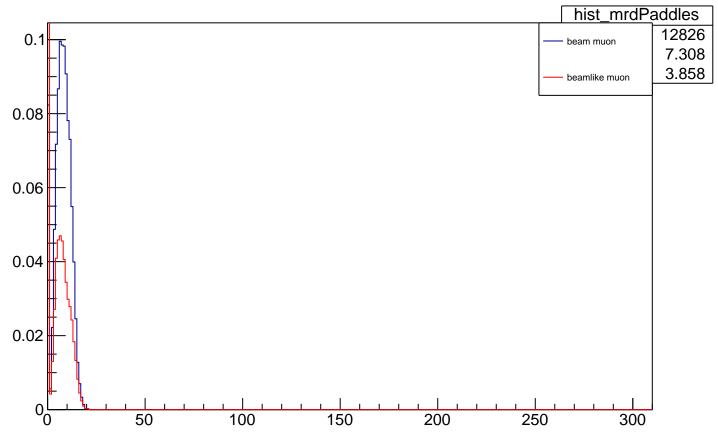
Fraction of LAPPD Hits in Ring



Fraction of LAPPD Hits in Ring

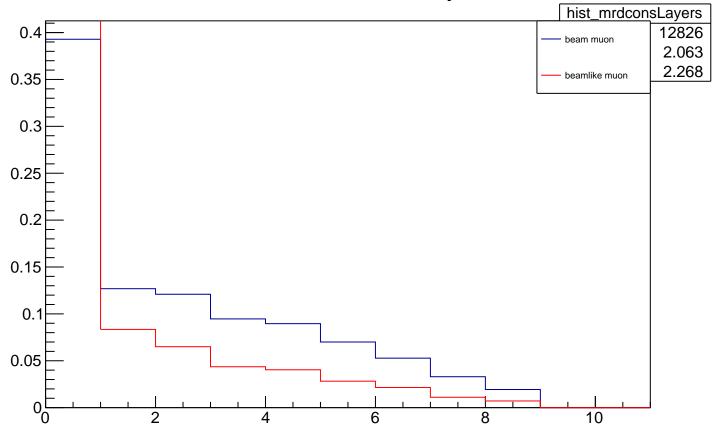


Num MRD Paddles hit

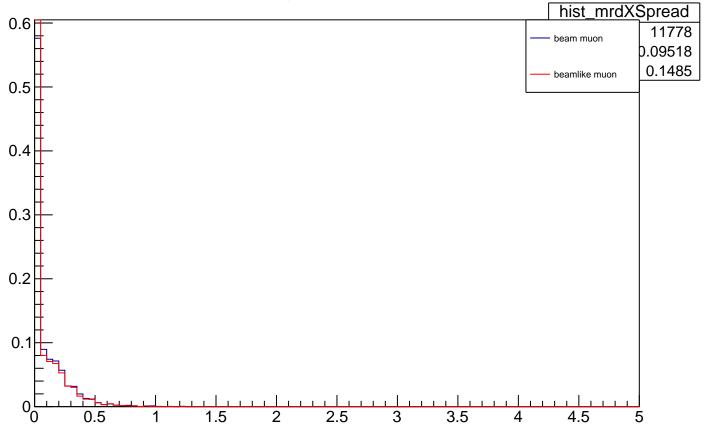


Num MRD Layers hit hist_mrdLayers 12826 0.14 beam muon 5.497 2.718 beamlike muon 0.12 0.1 0.08 0.06 0.04 0.02 6 10

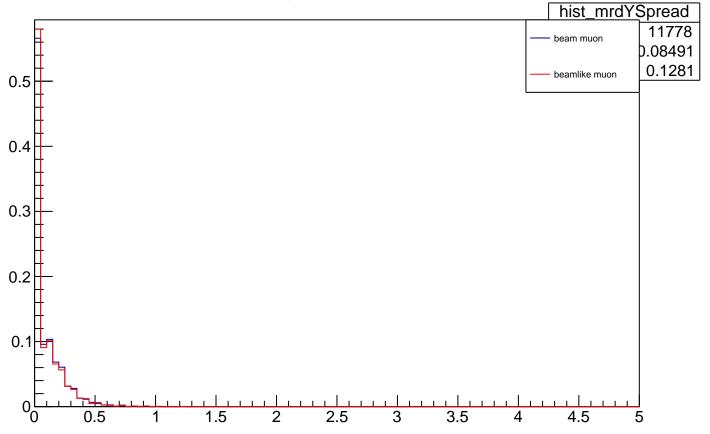
Num consecutive MRD Layers hit



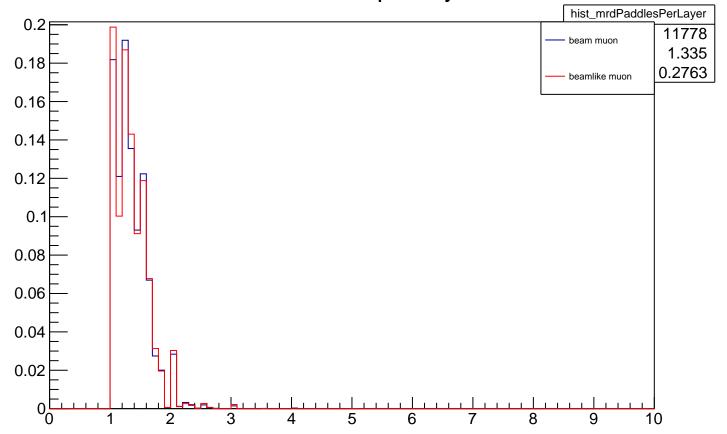
MRD Layer-wise X spread



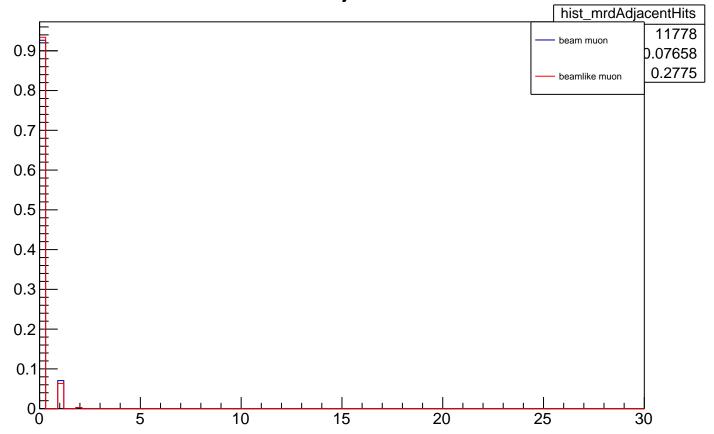
MRD Layer-wise Y spread



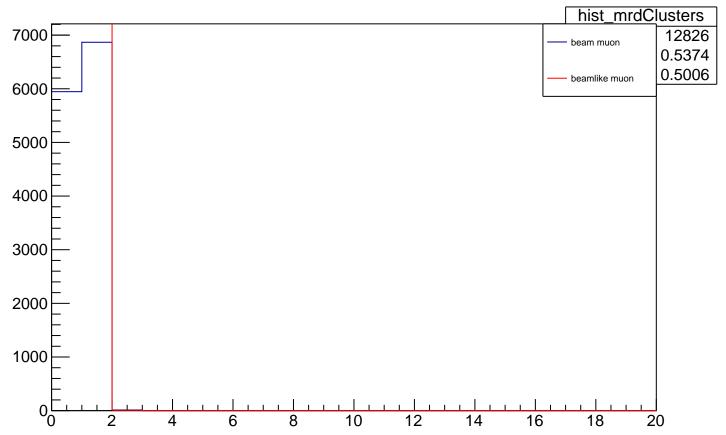
MRD Paddles per Layer



MRD # Adjacent hits



Num MRD Clusters



Energy primary particle hist_energy 0.003 12826 beam muon 873.5 197.4 beamlike muon 0.0025 0.002 0.0015 0.001 0.0005 0 500 1500 2000 2500 3000 3500 5000 1000 4000 4500

Number of rings hist_nrings 12826 beam muon beamlike muon 0.8 0.6 0.4 12 10 14 16 18 20

Multiple Rings hist_multiple_rings 12826 beam muon 0002339 0.01529 beamlike muon 8.0 0.6 0.4 0.2 0.2 0.6 1.2 1.6 1.8 0.4 8.0 1.4